



## Impact of Exchange Rate on Trade and GDP Growth in India

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Impact of Exchange Rate on Trade and GDP Growth in India Abstract: This Paper Studies the Impact of Exchange Rate on Export, Import and Gross Domestic Product(GDP) growth in India using the time series data from 2005 to 2015. The paper shows Correlation among these variables. The fluctuation in exchange rate effects the economy in the long and short run.

### Abstract

This Paper Studies the Impact of Exchange Rate on Export, Import and Gross Domestic Product (GDP) growth in India using the time series data from 2005 to 2015. The paper shows Correlation among these variables. The fluctuation in exchange rate effects the economy in the long and short run. For strengthening the economy government should make appropriate policy to establish balance exchange rate.

### Keywords

Exchange rate, Export, Import, GDP, Correlation.

### Introduction

Indian economy is facing a several unpredictable challenges, Exchange rate is one of them .Exchange rate is the price of one currency in term of another currency. it can be either fixed or floating .Central bank of the country decides fixed exchange rate whereas floating exchange rate are decided by the mechanism of market demand and supply.

The Index of competitiveness of currency of a country is also referred as Exchange Rate and an inverse relationship between exchange rate and competitive index, lower the value of this index higher the competition of the currency in any country. Exchange rate contributes a important role in economic activity.

The trade balance of any country is affected by the depreciation or appreciation of currency. Every country is trying to rise their GDP by export, So they devalue their currencies. As currency depreciates imported goods become more expensive for domestic buyers, while at the same

time exported goods become cheaper for foreign buyers.

Classical and neoclassical economists believe that trade means surplus. Trade provides the country to reach beyond the limits and remove the production problem of scarce resources and gain complete specialization and division of labour. This study has been divided into two parts. The first part describes economic variables and second shows the impact on these variables.

## Review of Literature

**Michel Ruta and Marc Auboin**, (2011) study the relationship between currencies and trade. Particularly both are investigated two issues, which are currency misalignment and impact on international trade of exchange rate fluctuations. Exchange rate fluctuation has bad impact on trade flows. The extent of this effect depends on a number of factors, including the existence of hedging of production instruments, the structure and the degree of economic integration across countries.

**John Romali and et al**, (2003) they examined the model of international trade in which trade depresses real exchange rate volatility impacts trade in products differently according to their degree of differentiation. During period 1970-97, applying the separate trade data from many countries. They found strong result which supports the prediction that trade dampens exchange rate volatility and also found that once they undertake the reverse causality problems. A huge effects of exchange rate volatility on trade found in some previous literature are reduced.

**Prof. Hasan Vergil**, (1998) empirically investigates the impact of real exchange rate volatility on the export flow of Turkey to the US and its three major trading partners in the European Union for the period 1990- 2000. The standard deviation of the percentage change in the real exchange rate is used to evaluate the exchange rate fluctuations. The Co-integration and error-correction models are used to obtain the estimates of the co-integrating relations and short-run dynamics respectively.

**Syed Abul Basher and et al**, (2001), examined a single equation rate pattern and exchange rate misalignment, whereas capital inflow increases, growth in terms of trade and rise in government consumption non-tradable result in a real appreciation of the currency.

**David and et al**, (1995) examined Central bank are primarily concern with the behaviour of prices and will use monetary policy to try insulating prices from exchange rate changes, then prices unresponsive to changes in the exchange rate.

## Research Methodology

The Research is based on Secondary data, which is collected from sites of RBI and World Bank. This research consider the Time series data since 2005 to 2015. For the uniformity in the analysis, all the data are taken in US dollar. To show the relationship among Exchange rate and Export, Import and GDP, Pearson's coefficient of correlation method is used.

## Hypothesis

1. There is no relationship between Exchange rate and Export.
2. There is no relationship between Exchange rate and Import.
3. There is no relationship between Exchange rate and GDP growth.

**Data Collection and Analysis**

The Indian Foreign Exchange rate has undergone a significant changes, It's imperative by fluctuation in Indian Rupees Exchange rate against US Doller. The below table summarises the data of Exchange Rate, GDP growth rate, Export and Import.

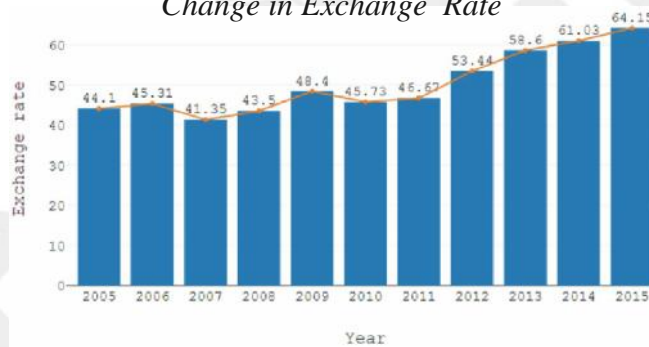
Year	Exchange Rate	Export (m\$)	Import(m\$)	GDP Growth Rate
2005	44.1	103091	149166	7.9
2006	45.31	126414	185735	8.1
2007	41.35	162904	251439	7.7
2008	43.50	185295	303696	3.1
2009	48.40	178751	288373	7.9
2010	45.73	251136	369769	8.5
2011	46.67	305964	489320	5.2
2012	53.44	300401	490737	5.5
2013	58.60	314416	450214	6.4
2014	61.03	310352	448033	7.4
2015	64.15	262291	381008	8.0

Source : RBI (The handbook of statistics on Indian Economy), World Bank (Nation Account Data)

**Exchange Rate in India (2005-15)**

This table shows the Calendar year average data of Exchange rate. During this decade from 2005 to 2015, the Exchange rate has increased from RS 44.10 to RS 64.15 per dollar . In this period currency is generally depreciating. The highest annual depreciation (growth) in 2012, which is 14.51%. The currency also appreciate two times. The highest annual appreciation in 2007, which is 8.74%.

Change in Exchange Rate



**Export – Import in India (2005-15)**

The figure shows Export Import change during this decade

Export Import

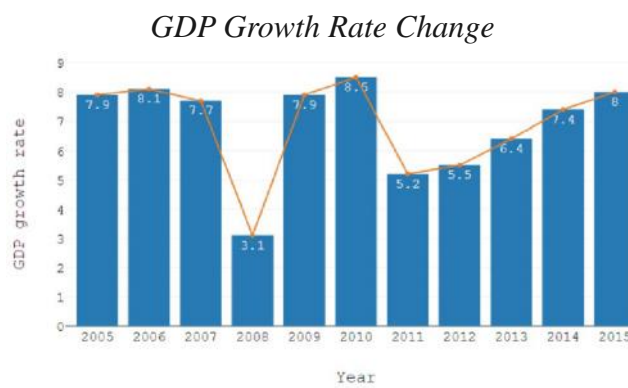


Export has increased from 103091million dollar to 262231 million dollar from 2005 to 2015. The highest annual growth in export is 40.49% in 2010 and highest negative annual growth in 2015, which is -15.48%. the major product of Indian export is petroleum, gems & jewellery and pharmaceutical product.

The import has also increased from 149166 million dollar to 381008 million dollar from 2005 to 2015.the highest annual growth in import is 35.38% in 2007 and highest negative annual growth in 2015, which is -14.96%. The product of Indian import is mineral fuels including oil, gems & precious metal and electrical machinery & equipment.

### **GDP Growth In India (2005 -15)**

In this decade Indian economy has increased from 7.9% to 8 % growth. In growth term, it is not a significant growth in GDP. According to World Bank data the highest growth is 8.5% in 2010 and lowest is 3.1 % in 2008. The main contributor in GDP growth are service sector after that manufacturing sector than agriculture and allied products.



### **Statistical Variables Analysis**

#### **Impact of Exchange rate on Export**

The Exchange rate and export are closer to highly correlated. The Statistical analysis shows that there is positive relationship between exchange rate and export, the value of  $r$  is 0.67. This correlation is significant at 0.05 level. In spite of the positive relation, The most of times annual relationship between exchange rate and export is not systematic. In this way existing theory of both variables are not applied in this decades.

#### **Impact of Exchange Rate and Import**

The Statistical analysis shows that there is positive correlation between exchange rate and import and the value of  $r$  is 0.59. This correlation is significant at 0.05 level. In spite of positive relation, the most of times annual relationship between exchange rate and import is not systematic. So, the prevailing theory of both variables are not applied in this decades.

#### **Impact of Exchange Rate and GDP Growth**

The Analysis represents there is positive correlation between exchange rate and GDP growth rate and the value of  $r$  is 0.11, This correlation is not significant at 0.05.

### **Finding and Conclusion**

1. The statistical analysis rejected the null hypothesis and found there is a relationship between exchange rate and export, which is positive.
2. The statistical analysis again rejected the null hypothesis and found there is a relationship between exchange rate and import, this one is also positive.

3. The statistical analysis also rejected the null hypothesis and found there is a relationship, and which is positive.

From the above Analysis, it can be concluded the fluctuation in exchange rate impacts these macroeconomics variables. India's Import always exceeds the Export in this decade. The research paper represent positive relation between exchange rate and export , import and GDP growth. According to prevailing theory, exchange rate and export are positively related and with import negatively related. But this paper shows both are positively related and the most of times also shows not the systematic relation in this decade (2005-15). In this way the general principle is not applied between the relation of exchange rate and export-import in this period. The general principle may be right in long run time series analysis.

## References

1. Ahamad, Nazneen and Stevenson, Doris Geide, (2012), "The Effect of GDP & Exchange Rate on the Trade Balance between the USA and Mexico," Journal of Business Management Dynamics,(Mar., 29- 2012).
2. Harberger, A. (2004), "Economic Adjustment and the Real Exchange Rate, and the Real Exchange Rate", in S. Edwards and L.Ahamed (eds.), "Economic Adjustment Exchange Rates in Developing Countries", University of Chicago Press, 10, 308-321
3. Hoffman, M.E.S. (2005), The Exchange Rate and the Trade Deficit: What's the Relationship? June 2005. Available at: <http://people.duke.edu/~meh13/exchangerate-tradedeficit.pdf>
4. Joseph, Afolabi Ibikunle and Akhanoul, Isaac,(2011), "An Empirical Investigation of the Link between Exchange Rate Volatility and Trade in Nigeria," Economic and Management Science, (2011).
5. M. Atiqur Rahman and Syed Abul Basher,(2001), "Real Exchange Rate Behaviour and Exchange Rate Misalignment in Bangladesh," International Economic Studies, Vol. 27, No. 2(Jun 2001), 69-93.
6. Meese, R., Rogoff, K. (1983). "The Out-of-Sample Failure of Empirical Exchange Rate Models: Sampling Error or misspecification?," National Bureau of Economic Research, Inc. (67- 112).
7. Marc Aubon and Michele Ruta WTO,(2011), "The Relationship between Exchange Rates and International Trade," Economic search and Statistics, Division, (Oct 2011-17).
8. Terence D.Agbegegbe Janet Stotsky and Asegedech WoldeMariam,(2005), "Trade Liberalization, Exchange Rate changes, and Tax Revenue in Sub-Saharan Africa," Journal of Asian Economics 17 (2006) 261-284.(May., 2005).

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